DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13

October 2009 has been entered.

2.   By the above submission, Claims 1, 3-6, 9, 16, 17, 19-22, 25, 31, 33-36, and 39

have been amended. Claims 2, 15, 18, and 32 have been canceled. No new claims

have been added. Claims 1, 3-14, 16, 17, 19-31, and 33-44 are currently pending in the

present application.

Response to Amendment

3.   The declarations under 37 CFR 1.132 filed 13 October 2009 are sufficient to

overcome the rejection of claims 1-44 under 35 U.S.C. 102(a) as being anticipated by

the Hacigumus reference, "Executing SQL over Encrypted Data in the Database-

Service-Provider Model".

Allowable Subject Matter

4.   Claims 1, 3-14, 16, 17, 19-31, and 33-44 are allowed.

5.   The following is an examiner's statement of reasons for allowance:

Independent Claim 1 is directed to a client-server relational database system that

includes client and server computers connected by a network, in which the client

computer encrypts data from the client, the server computer hosts the encrypted data

and operates on it to produce an encrypted intermediate results set, which is sent from

the server to the client. The client decrypts the encrypted intermediate results, operates

on them to create an updated intermediate results set, which is then re-encrypted by the

client and returned to the server. The server then further operates on the re-encrypted

intermediate results to generate an encrypted new intermediate results set, which is

then sent to client, where the client then decrypts and performs additional operations to

produce an answer for presentation to a user. Independent Claim 16 is directed to a

similar system. Independent Claims 17 and 31 are directed to a method and a software

implementation of a method corresponding to the functionality required by Claim 1. The

closest art, Hacigumus, "Executing SQL over Encrypted Data in the Database-Service-

Provider Model", has been shown by the above-noted declarations under 37 CFR 1.132

to be the Applicant's own work, and is therefore disqualified as prior art. Additional

close prior art, for example, Lirov, Rice, and Nishizawa, as previously cited (see the

Office action mailed 27 June 2008), disclose systems in which database queries are

encrypted; however, none of the cited art, alone or in combination, teaches or suggests

the specific sequence of steps or functions as claimed, in particular the re-encryption

and returning of the results for further processing at the server and subsequent

processing at the client. See also the reasons for allowance set forth in the parent

application (Serial No. 10/449,421) in the Office actions mailed 22 October 2007 and 29

July 2008.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

   a.   Chan, US Patent 5713018, discloses a system that includes encrypting

   SQL query messages and data.

   b.   Garrison, US Patent 6275939, discloses a system for secure remote

   access of a database that includes encryption of data sent to a client.

   c.   Yagawa et al, US Patent 6792425, discloses a secure database system

   that includes encrypting data of concealed portions of a database.

   d.   Pucheral et al, US Patent Application Publication 2005/0044366, discloses

   a system for encrypting database records at a server.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary A. Davis whose telephone number is (571)272-3870. The examiner can normally be reached on weekdays 8:30-6:00, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zachary A Davis/
Examiner, Art Unit 2437